

# Chapter 12: Transportation Systems

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# Importance of the Transportation Sector

- The transportation sector is critical to the societal needs of the community, the community built environment, and community disaster response and disaster recovery
- The transportation sector is very complex with multiple stakeholders and interconnecting modes: roadway networks, rail lines, airports, harbors, ports, waterways and pipelines
- It is vital to community evacuation, emergency response, access to critical community facilities and recovery from disasters
- Movement of people and goods usually relies on multiple modes
- The vulnerability of the transportation sector will directly affect the resilience of the community and its infrastructure



# Transportation Functions to Meet Community Needs

## Societal Needs and Transportation (Daily)

Social Institution	Purpose of Buildings within each Social Institution	Transportation	
		People	Goods
<b>Family</b>	Place to Live		
<b>Economic</b>	Places to work, manufacture, process, store and sell wholesale goods, serve or dine on food, entertain or be entertained, sell or buy retail goods, teach, bank, be groomed, receive or deliver goods, wait for, board, transfer or arrive on transportation system.		
<b>Government</b>	Place to work and public to meet in serving community including routine services, public safety and emergency services		
<b>Health</b>	Place for emergency; short- and long-term health needs		
<b>Education</b>	Place to learn		
<b>CSO</b>	Place to shelter and provide sustenance		
<b>Religious Org</b>	Place to worship and congregate		
<b>Media</b>	Provide a place to receive and disseminate news and information		

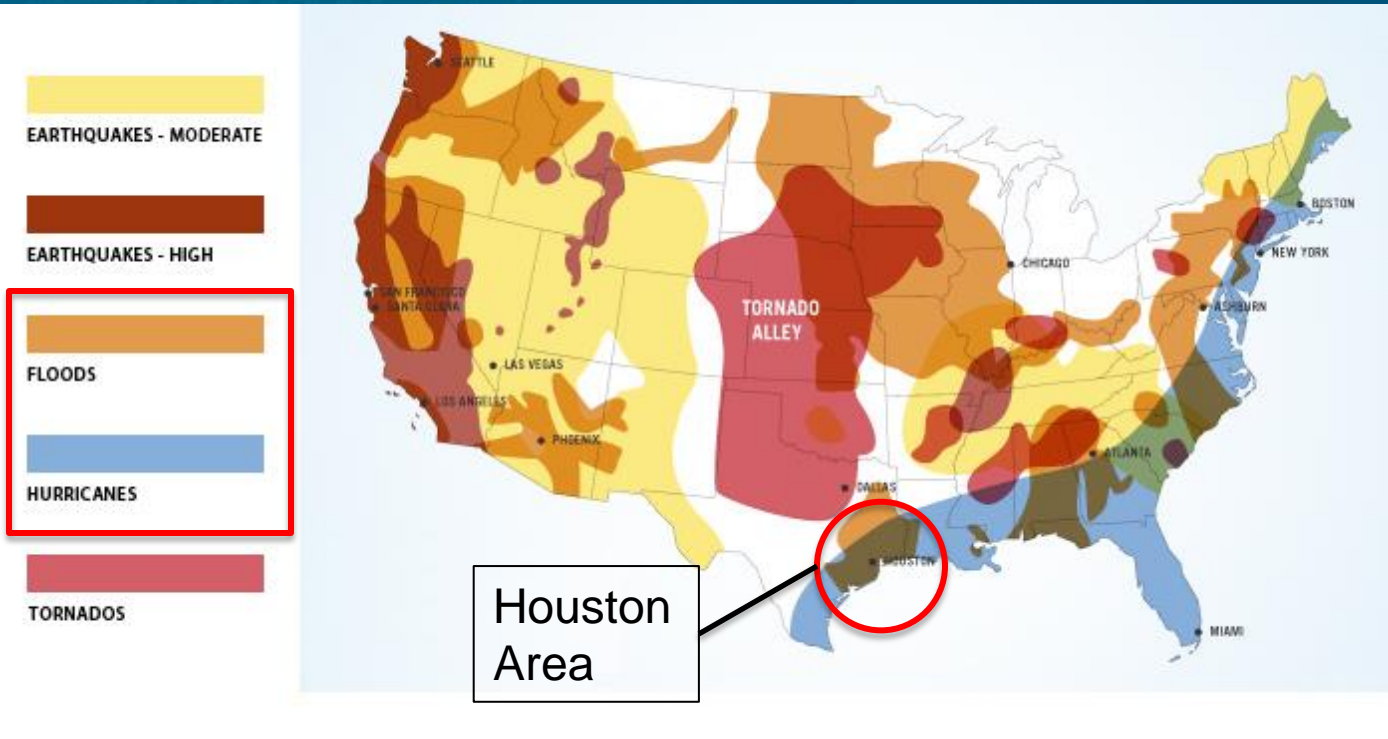
# Transportation is Critical in Disasters

## Societal Needs and Transportation (Critical)

Social Institution	Purpose of Buildings within each Social Institution	Transportation	
		People	Goods
<b>Family</b>	Place to Live		
<b>Economic</b>	Places to work, manufacture, process, store and sell wholesale goods, serve or dine on food, entertain or be entertained, sell or buy retail goods, teach, bank, be groomed, receive or deliver goods, wait for, board, transfer or arrive on transportation system.		
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# Determine the Disasters for Your Community



- How vulnerable is transportation to the expected type of disaster?
- What recovery period was experienced in the past?
- What improvement would the community like to see?

Roads, Bridges,  
Highways, and  
Road Tunnels

Rail

Air

Ports,  
Harbors and  
Waterways

Pipelines





# Look at Past Recovery Periods

Example: New Orleans, LA Community, Hurricane Katrina (August 29, 2005)

Infrastructure	Weeks Closed																			
<b>Highways</b>																				
Twin Span Bridge EB																				
Twin Span Bridge WB																				
Lake Pont. Causeway NB																				
Lake Pont. Causeway SB																				
<b>Rail Corridors</b>																				
CSX Gulf Coast																				
Norfolk So. Lake P. Bridge																				
<b>Pipelines</b>																				
LA Offshore Oil Port																				
<b>Ports</b>																				
Port of New Orleans																				
Port of South Louisiana																				
<b>Air</b>																				
Louis Armstrong Int'l.																				
Lakefront Airport																				



# Set Performance Goals to Improve Them

Set by Panel of Key Stakeholders within the Community

Transportation Panel



- Example given was for Katrina, which represented the Extreme Hazard Level to the New Orleans, LA community
- Hazard levels of *Routine*, *Expected* and *Extreme* should be considered
- First look at systems serving the community that are critical for disaster ingress, egress and community resilience of critical facilities
- Then look at systems serving the societal needs of the community in daily life to determine the desired restoration level for community recovery

